Chapter Five AIRPORT PLANS



# **AIRPORT PLANS**

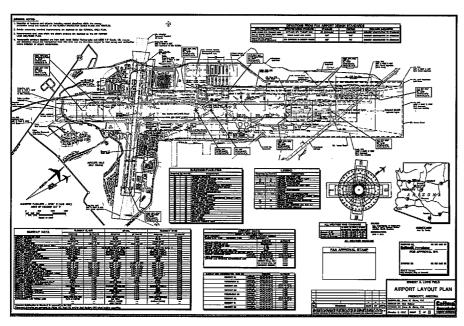
he intent of the master planning process, thus far, has been to project aviation demand through the planning period and to establish the airside and landside facilities required to accommodate that expected demand. In the preceding chapter, an evaluation was made of the options for the future development of the projected airside and landside facility needs. Through this process, an airport development concept has evolved.

RECOMMENDED AIRPORT DEVELOPMENT

As a result of the Master Plan analysis, a number of airport improvements have been recommended for implementation over the 20-year planning period to accommodate expected aviation demand. The following is a list of these recommended improvements:

#### Airside:

- Extend the primary runway (Runway 3R-21L) 1,684 feet to the northeast (to 9,300 feet in length)
- Extend the associated parallel taxiways 1,684 feet
- Install eight high-speed exit taxiways between Runway 3R-21L and the associated parallel taxiways
- Extend the parallel runway (Runway 3L-21R) 1,338 feet to the northeast (to 6,200 feet in length) and widen the runway from 60 feet to 75 feet
  - Extend the associated parallel taxiways 1,338 feet
  - Extend the northeast-side parallel taxiway associated with Runway
    12-30 to full-length
  - Extend runway and taxiway lighting; relocate existing runway lighting on Runway 3L-21R



- Relocate Runway End Identifier Lights (REILs)
- Relocate Medium Approach Lighting System with Runway Alignment Indicator Lights (MALSR)
- Acquire approximately 40 acres of land to accommodate the relocated Runway Protection Zones from the extended runways and the proposed access

#### Landside:

- Remove the existing commercial terminal building
- Construct commercial terminal facilities, including: terminal building, automobile parking, and aircraft apron
- Relocate 20 Port-a-Port hangars and construct 98 T-hangars/Tshades and associated taxilanes
- Construct conventional hangars
- Expand and construct aircraft apron area
- Install 32 aircraft tiedowns
- Construct 158 additional automobile parking spaces
- Improve existing access roads, including widening the roadways
- Extend access road around northeast end of airfield

#### AIRPORT LAYOUT PLANS

The remainder of this chapter provides a description of the official layout drawings for the airport that will be submitted to the Federal Aviation Administration (FAA) and Arizona Department of Transportation - Aeronautics Division (ADOT) for review and approval. These plans, referred to as Airport Layout Plans, have been prepared to graphically depict the ultimate airfield layout, facility development, and imaginary surfaces which protect the airport from hazards. This set of plans includes:

- Airport Layout Plan
- Terminal Area Plan
- Approach Zones Profiles
- Runway Protection Zone Plans
- Land Use Plan
- Property Map

The airport layout plan set has been prepared on a computer-aided drafting system for future ease of use. computerized plan set provides detailed information of existing and future facility layout on multiple layers that permits the user to focus in on any section of the airport at a desirable scale. The plan can be used as base information for design, and can be easily updated in the future to reflect new development and more detail concerning existing conditions as made available through design surveys. The airport layout plan set is submitted to the FAA for approval and must reflect all future development for which federal funding is anticipated. Otherwise, the proposed development will not be eligible for federal funding. Therefore, updating these drawings to reflect changes in existing and ultimate facilities is essential.

#### AIRPORT LAYOUT PLAN

The Airport Layout Plan (ALP) drawing graphically presents the existing and ultimate airport layout. Detailed airport and runway data are provided to facilitate the interpretation of the master plan recommendations. Both airfield and landside improvements are depicted.

#### TERMINAL AREA PLAN

The Terminal Area Plans provide greater detail concerning landside improvements and at a larger scale than the on the ALP. The Terminal Area Plans include detail concerning general aviation and passenger terminal facilities at the airport.

#### FAR PART 77 AIRSPACE PLAN

The Part 77 Airspace Plan is a graphic depiction of Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace, regulatory criterion. The Part 77 Airspace Plan can aid local authorities in determining if proposed development could present a hazard to the airport and obstruct the approach path to a runway end.

The Part 77 Airspace Plan assigns three-dimensional imaginary areas to each runway. These imaginary surfaces emanate from the runway centerline and are dimensioned according the visibility minimums associated with the approach to the runway end and size of aircraft to operate on the runway. The

Part 77 imaginary surfaces include the primary surface, approach surface, transitional surface, horizontal surface, and conical surface. Part 77 imaginary surfaces are described in the following paragraphs.

#### **Primary Surface**

The primary surface is an imaginary surface longitudinally centered on the runway. The primary surface extends 200 feet beyond each runway end and its width is determined by the type of approach established for that runway end (i.e., visual, non-precision, precision). The elevation of any point on the primary surface is the same as elevation along the nearest associated point on the runway centerline. Under Part 77 regulations. the primary surface for Runway 3R-21L is 1,000 feet wide. The primary surface for the remaining runways are 500 feet wide.

Situated adjacent to the runway and taxiway system, the primary surface must remain clear of unnecessary objects to allow for the unobstructed passage of aircraft. Within the primary surface, objects are only permitted if they are no taller than two feet above the ground and if they are constructed on frangible (breakaway) fixtures. The only exception to the two-foot height requirement is for objects whose location is fixed by function. A precision approach path indicator (PAPI) system is an example of an object which falls within the category of "fixed by function."

#### **Approach Surface**

An approach surface is also established for each runway. The approach surface begins at the same width as the primary surface and extends upward and outward from the primary surface end centered along an extended runway centerline. The upward slope and length of the approach surface is determined by the type of approach (existing and/or planned) to the runway approach surface for end. The instrument approach to Runway 3R extends 10,000 feet from the end of the primary surface at an upward slope of 34 to 1 to a width of 3,500 feet. The approach surface to Runway 21L extends a horizontal distance of 10,000 feet from the end of the primary surface at an upward slope of 50 to 1 then extends an additional 40,000 feet at a slope of 40 to 1 to a width of 16,000 feet. The approach surfaces for Runway 3L-21R and Runway 12-30 extends 5,000 feet from the primary surface end at an upward slope of 20:1 to a width of 1,500 feet.

#### **Transitional Surface**

Each runway has a transitional surface that begins at the outside edge of the primary surface at the same elevation as the runway. The transitional surface also connects with the approach surfaces of each runway. The surface rises at a slope seven to one up to a height which is 150 feet above the highest runway elevation. At that point, the transitional surface is replaced by the horizontal surface. The transitional surface defines the location of the building restriction line.

#### **Horizontal Surface**

The horizontal surface is established at 150 feet above the highest elevation of the runway surface. Having no slope, the horizontal surface connects the transitional and approach surfaces to the conical surface at a distance of 10,000 feet from the primary surfaces of each runway.

#### **Conical Surface**

The conical surface begins at the outer edge of the horizontal surface. The conical surface then continues for an additional 4,000 feet horizontally at a slope of 20 to 1. Therefore, at 4,000 feet from the horizontal surface, the elevation of the conical surface is 350 feet above the highest airport elevation.

## RUNWAY PROTECTION ZONE PLAN

The Runway Protection Zone Plan is a scaled drawing of the runway protection zone (RPZ), runway safety area (RSA), obstacle free zone (OFZ), and object free area (OFA) for each runway end. A plan and profile view of each RPZ is provided to facilitate identification of obstructions that lie within these safety areas. Detailed obstruction and facility data is provided to identify planned improvements and the disposition of obstructions.

#### LAND USE PLAN

The objective of the Land Use Plan is to coordinate uses of the on-airport

property in a manner compatible with the functional design of the airport facility and to define compatible land uses in the airport environs area. Onairport land use planning is important for the orderly development and efficient use of available space. There are two primary considerations for airport land use planning. These are, first, to secure those areas essential to the safe and efficient operation of the airport; and, second, to determine compatible land uses for the balance of the property which would be most advantageous to the airport and When development is community. proposed at the airport it should be directed to the appropriate land use area depicted on this plan.

#### PROPERTY MAP

The Property Map provides information on the acquisition and identification of all land tracts acquired by the airport. It denotes which properties were obtained by fee simple title and those that are avigation easements. It also indicates the date of acquisition for each tract and which properties, if any, were obtained with federal funds under federal aid programs.

#### **SUMMARY**

The airport layout plan set is designed to assist the City of Prescott in making decisions relative to future development and growth at Ernest A. Love Field. The plan provides for development to satisfy expected airport needs over the next twenty years and well beyond. Flexibility will be a key to future development since activity may not occur exactly as forecast. The plan has considered demands that could be placed upon the airport even beyond the twenty year planning period to ensure that the facility is capable accommodating a variety of circumstances. The F.A.R Part 77 Airspace Plan should be used as a tool to ensure land use compatibility and restriction of the heights of future structures or antennae which pose a hazard to air navigation. The ALP set also provides the City of Prescott with options to pursue in marketing the assets of the airport for community development. Following the general recommendations of the plan, the airport can maintain it's long term viability and continue to provide air transportation services to the region.



## AIRPORT MASTER PLAN

PRESCOTT, ARIZONA

### AIRPORT LAYOUT PLANS

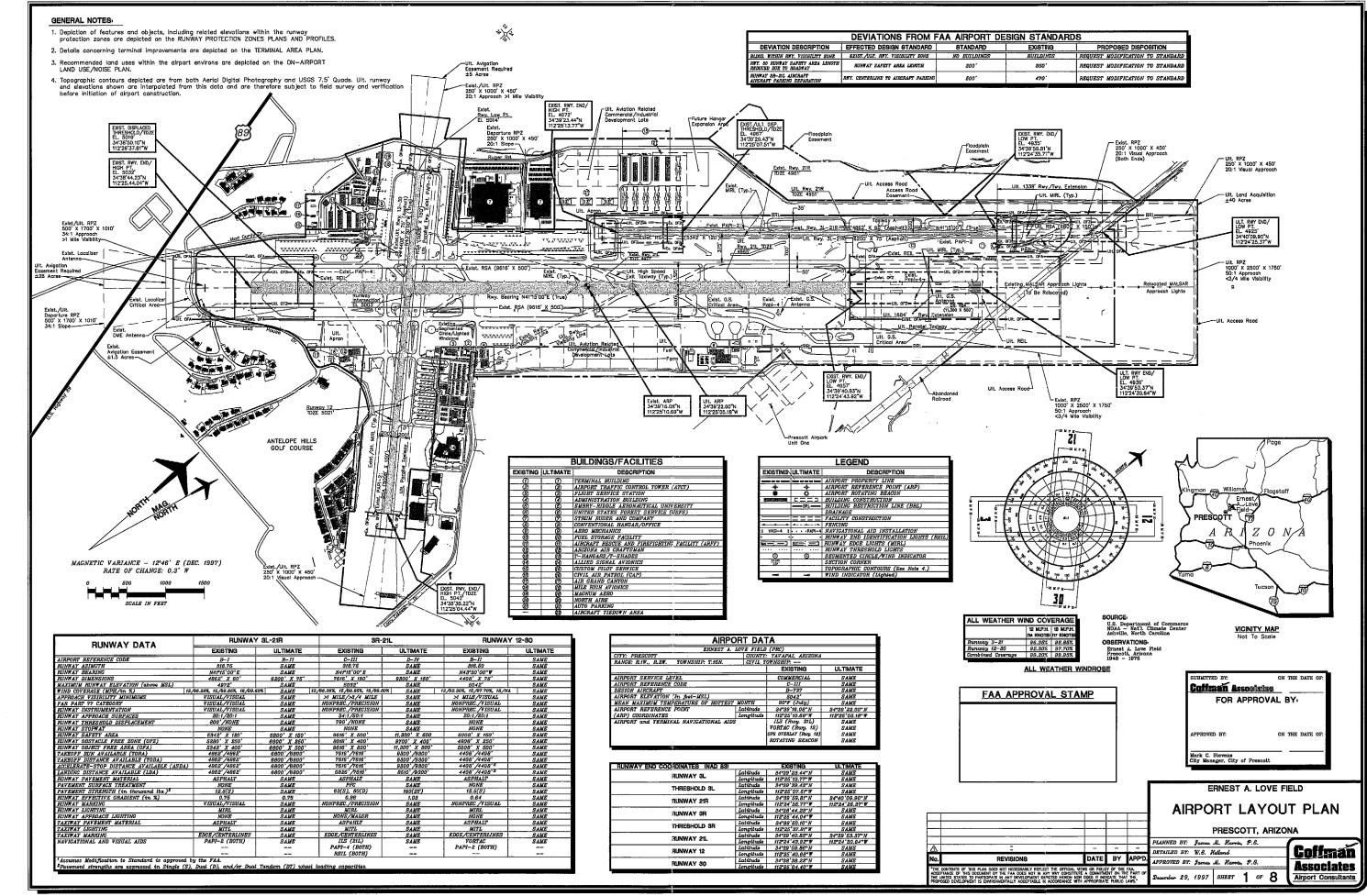
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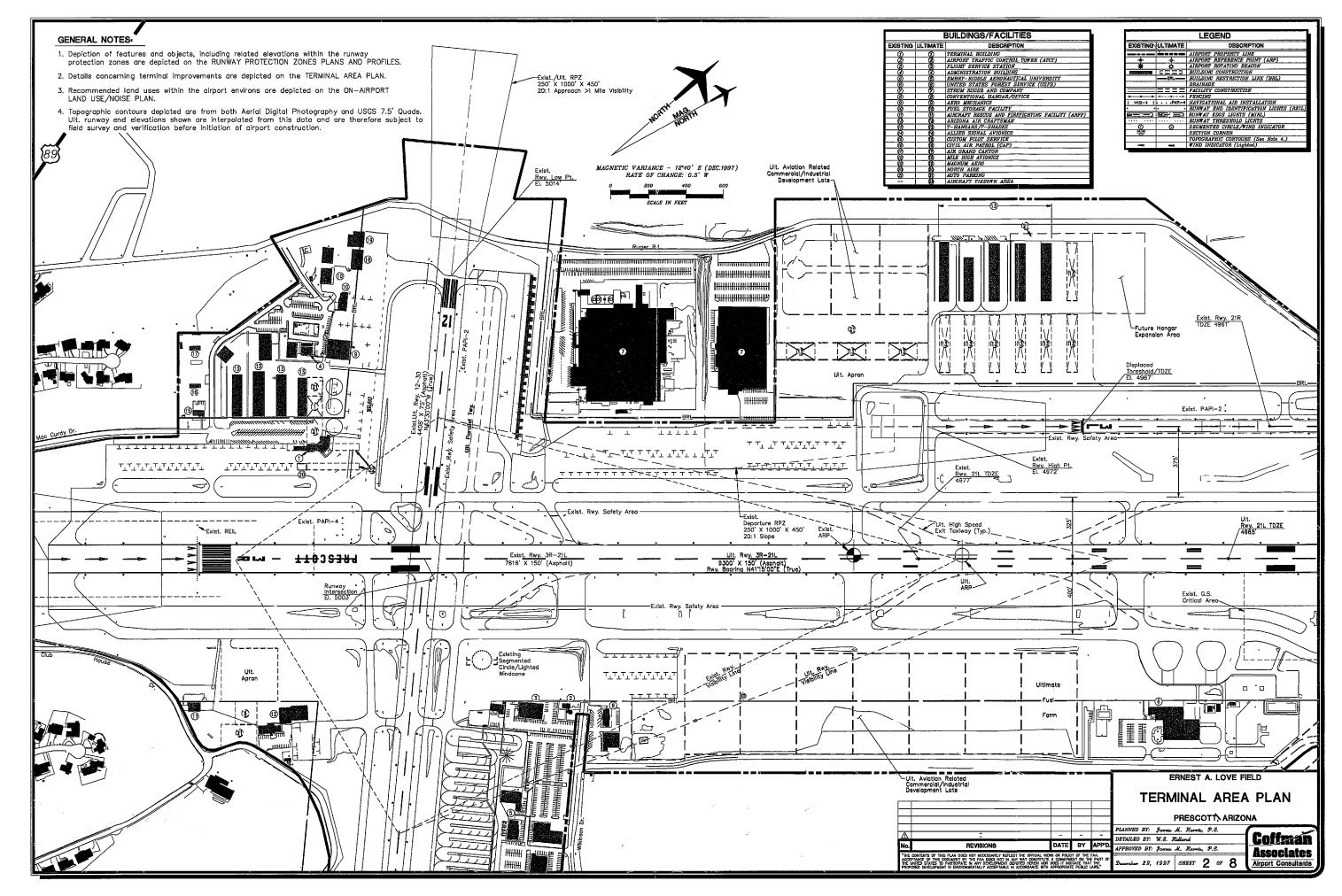




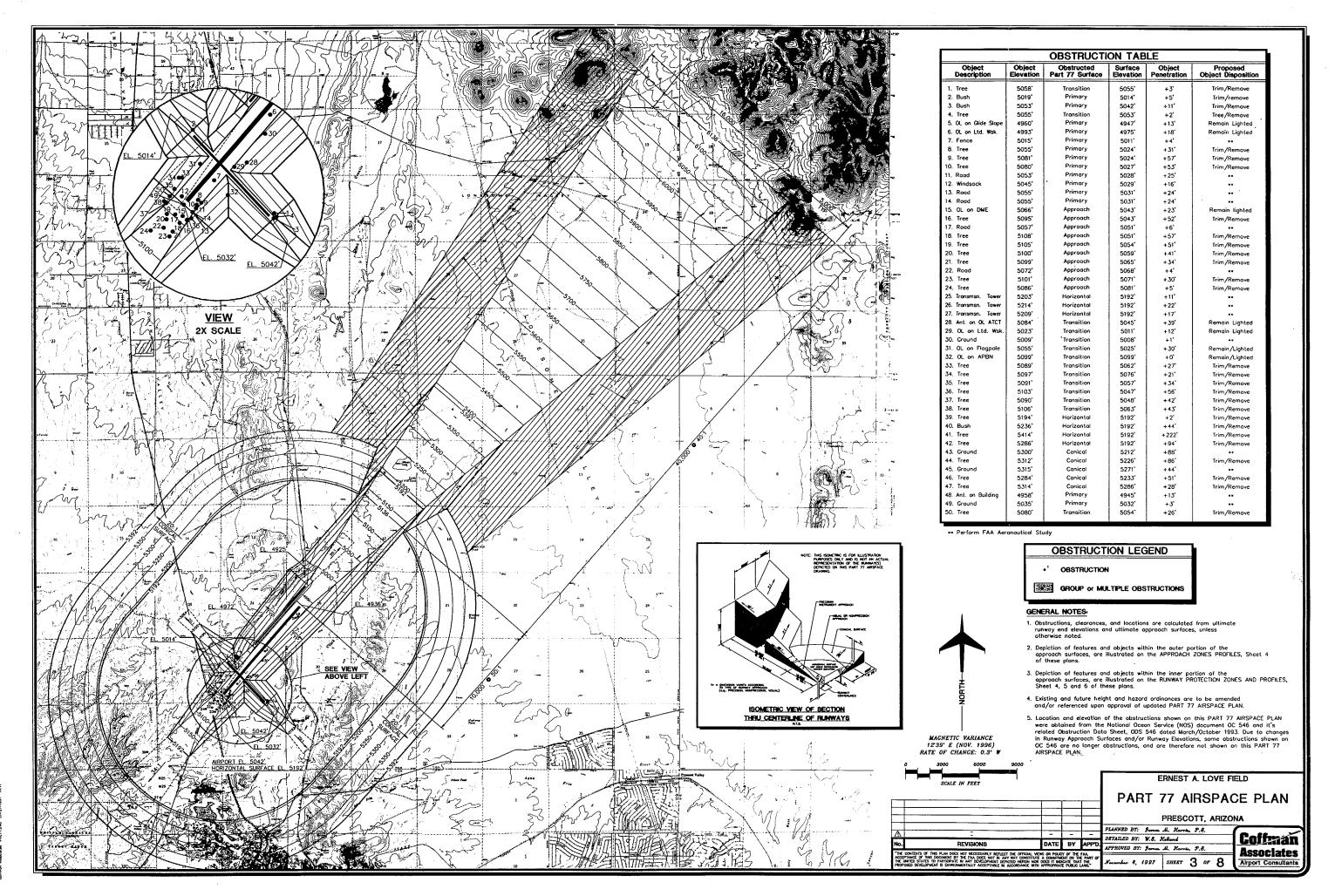
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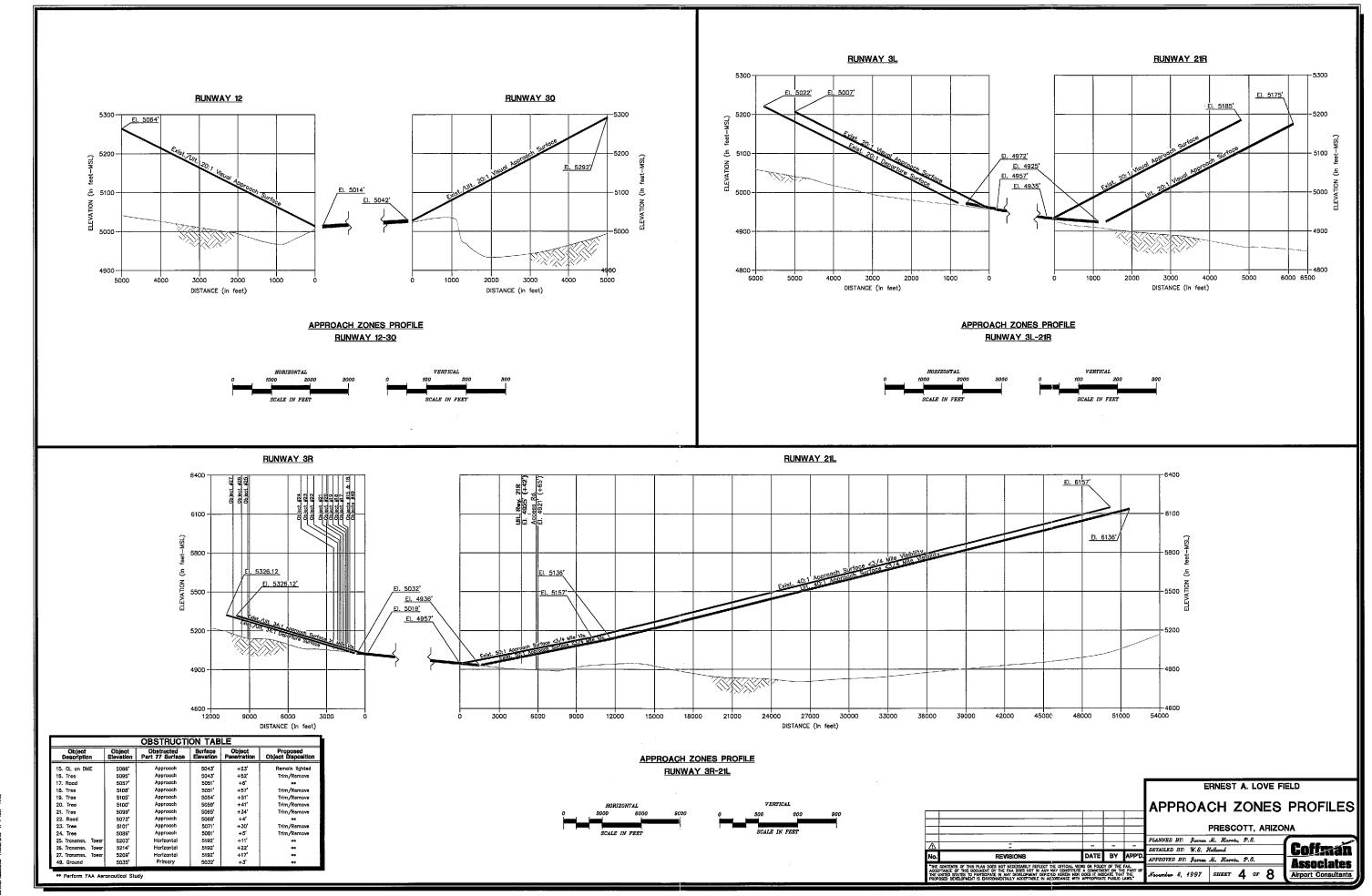


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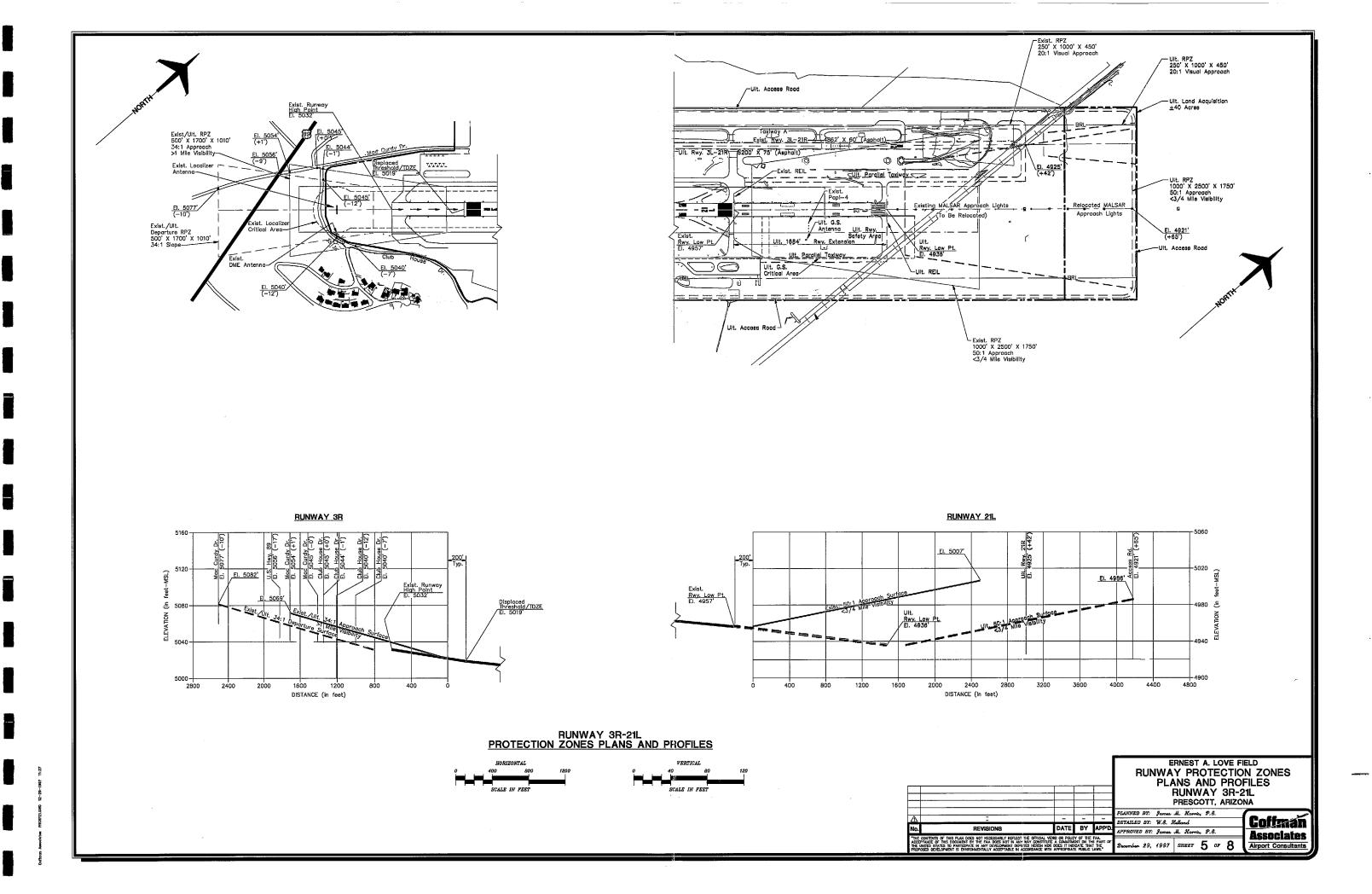


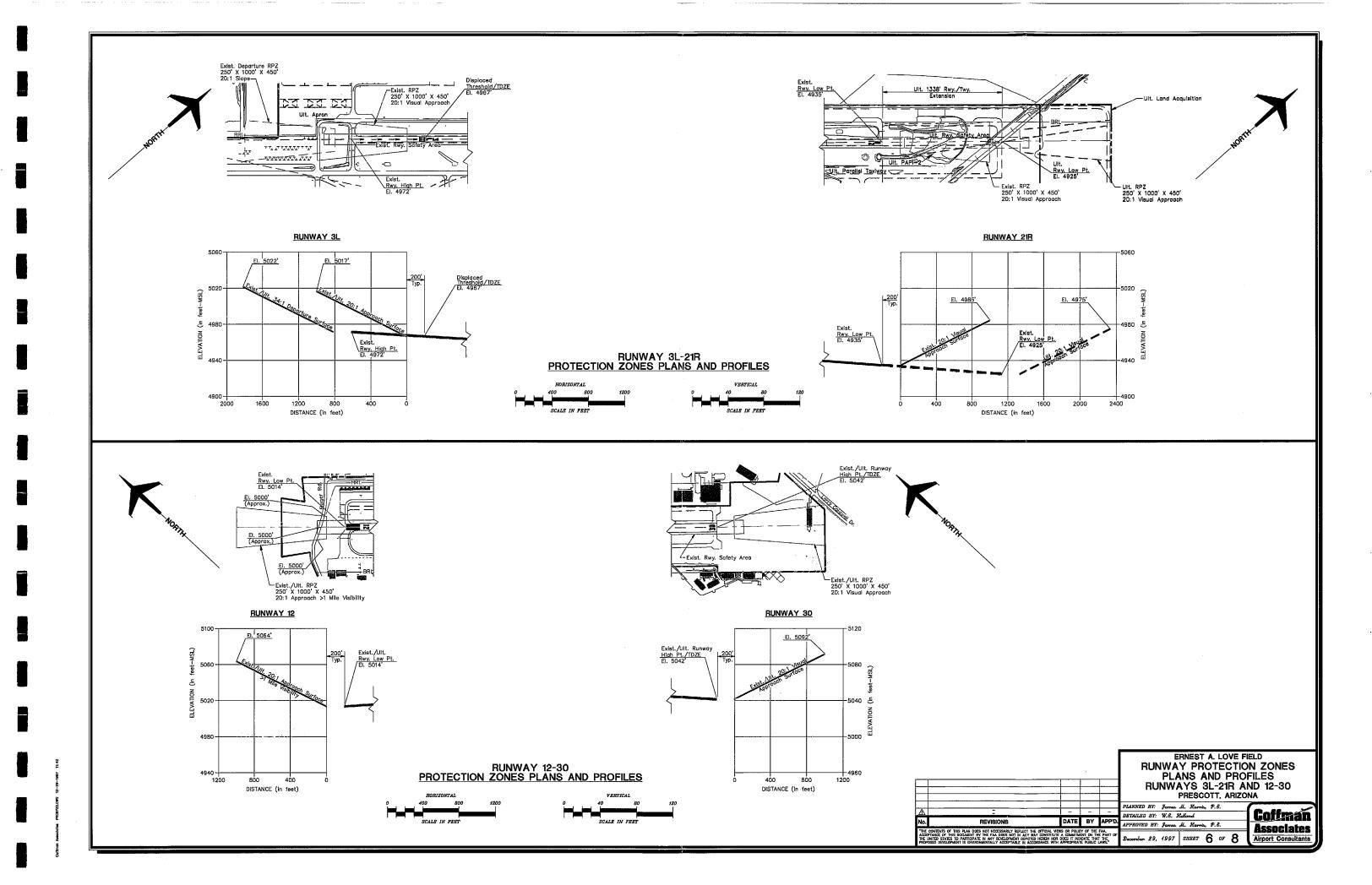
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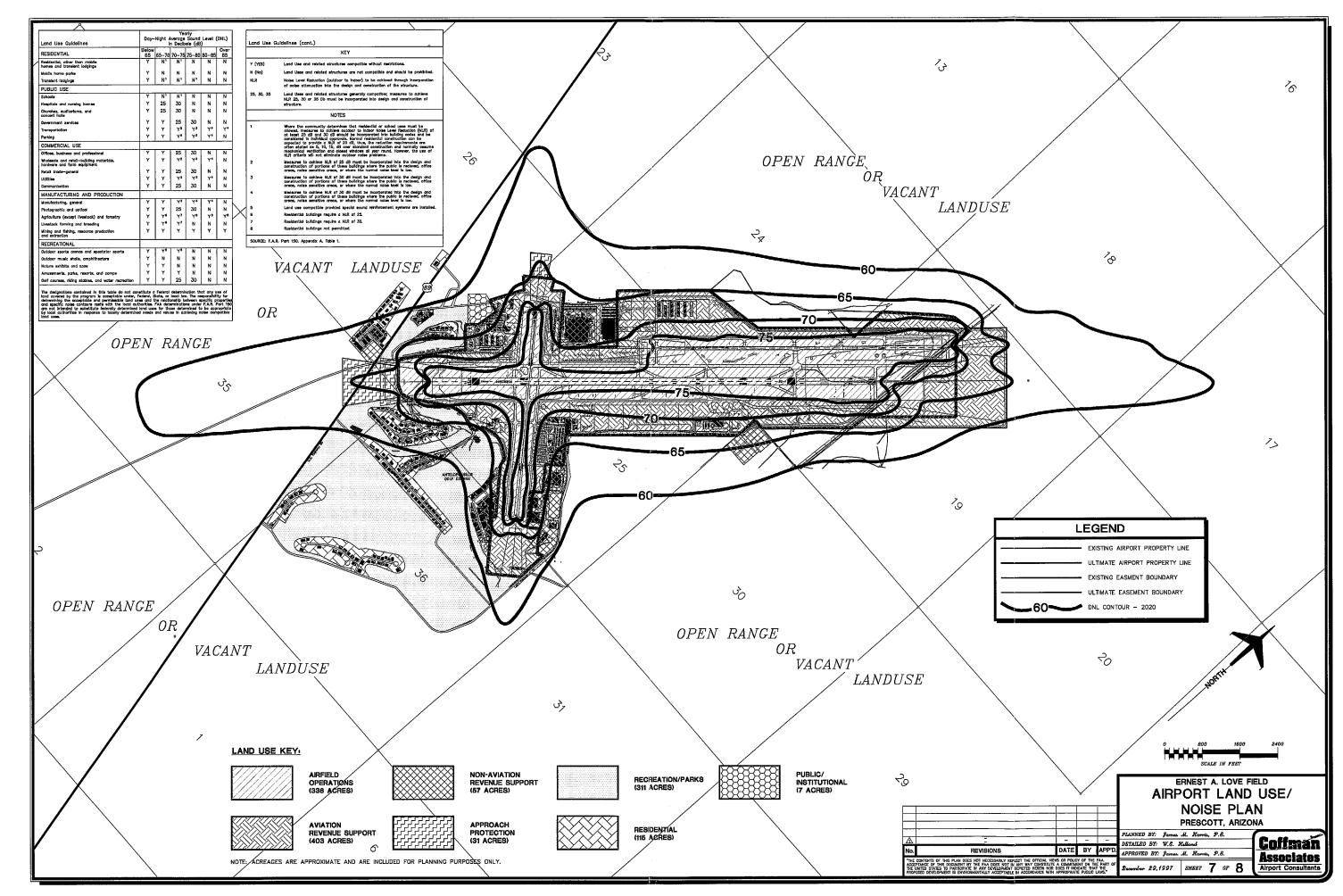




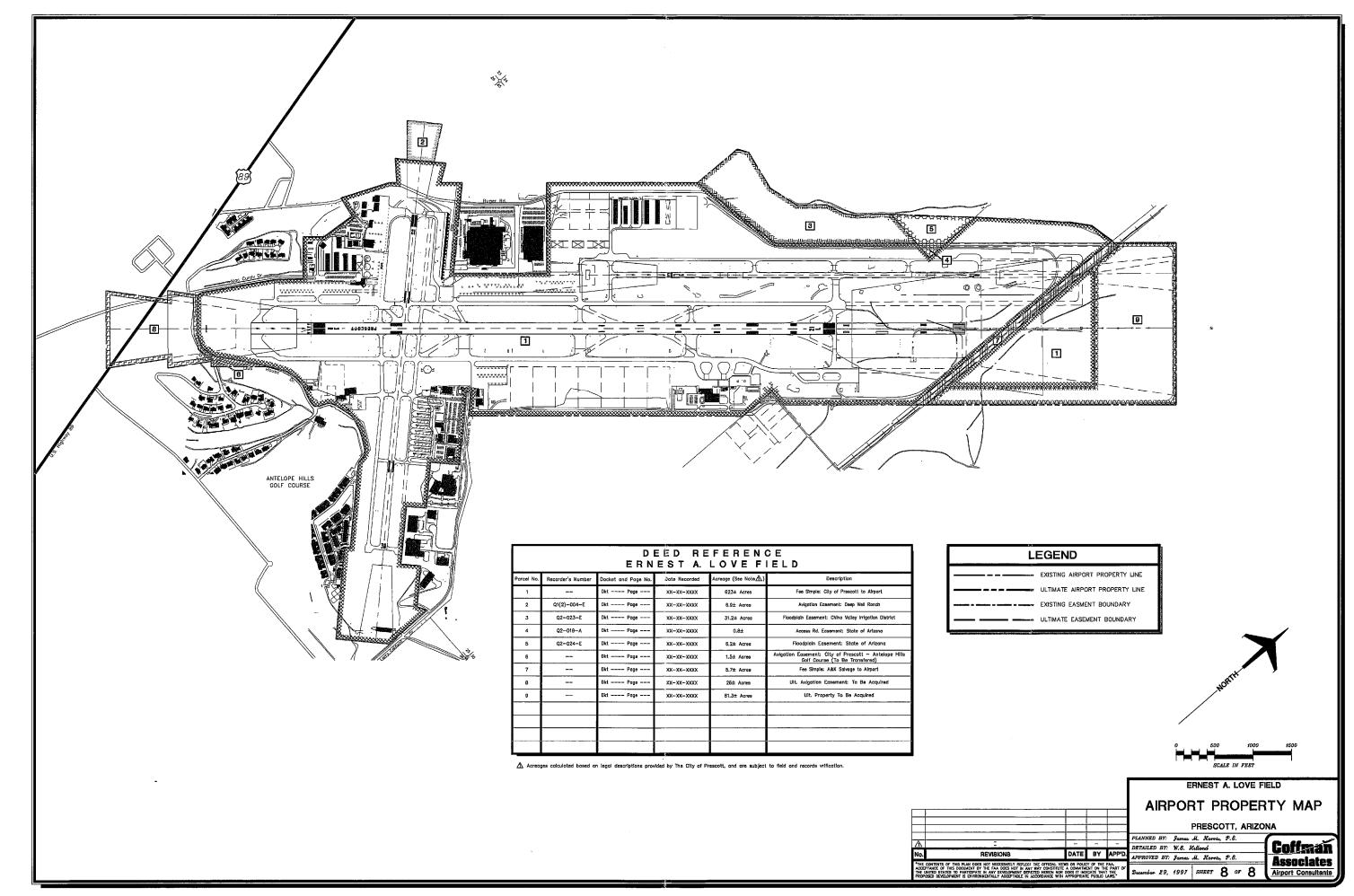
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